

COST *and* MANAGEMENT

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Standard Costs

By D. M. FARISH, C.A.

Chief Accountant, Northern Electric Company, Limited

(Before Montreal Chapter, March 9, 1928.)

UNDoubtedly the most important advancement in Cost Accounting has been the development in recent years of the use of Standard Costs.

For many years there have been in general use two main types of cost systems, viz., the "job order system" and the "process cost system," which might be termed the original fundamentals of cost accounting systems which were natural developments of cost accounting ideas. There are other types of systems which are further developments of the main systems referred to, such as operation costs and class costs.

In the present time of wonderful scientific developments it is essential that new ideas be developed which will provide more valuable information with regard to costs and business efficiency. As manual labour has been superseded by mechanical equipment, the horse by the automobile, the stage coach by the railway train, etc., in the ordinary routine of progress, so must old methods of cost accounting give way to new methods, such as standard costs, when it means a scientific development which is of invaluable aid to business management.

We have frequently heard that Budget Control in business to-day is essential, as the forecasting of business acts as a chart in aiding the management to guide the business along a successful path. In other words, it is a standard of measurement by which actual performance may be compared with the standard or forecast for the period.

Generally speaking, it may be said that competition establishes selling prices and acts as the measure in this respect. Selling prices being therefore to some extent beyond the control of the Company, is it not essential that a standard of efficiency with regard to costs of manufacture be instituted as an aid to the management? We have the budget as the measurement of the business as a whole and competition with regard to sales prices, so we therefore should wel-

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come any development which will act as an aid to cost and manufacturing efficiency when it is also an economic weapon.

Before proceeding further let us define "Standard Costs," as there appear to be many ideas as to what "Standard Cost" means. The standard cost of an article is that cost which results from computing its manufacturing specifications at fixed basic prices for the components of material, labour and manufacturing expense. As a specification is essential prior to the manufacture of an article, it is obvious therefore that a standard cost can be calculated as outlined above.

In installing a cost system it has always been admitted that it is useless to incur the expense of installation unless the management has definitely considered the wisdom of such an installation, and that the system will be given a fair trial with full co-operation from all concerned. The same principle holds good with regard to the installation of standard costs, their value must first of all be accepted and the management must have sufficient confidence in them to see that the standards are carefully and accurately prepared and used as an aid to the efficient operation of the manufacturing departments.

One great advantage should not be overlooked. It is not necessary to use standard costs to the fullest extent, they may be developed gradually by establishing standards for certain operations and then gradually extending their use. Also standards may be used for material only, labour only or expense only, or all three.

You can also use the job order system and obtain the so-called actual cost and use the standard costs for transfers and as a check against the order cost. The same procedure can also be applied to the process cost system.

The greatest value of standard costs is the fact that you establish a standard cost for each operation or group of operations, and so establish a normal cost against which you can measure the actual cost of each operation or group of operations.

Of what use is the so-called actual cost of manufacture of an article probably some two or three weeks or more after the order is completed. If there is any increase in cost compared with the previous cost, you find out at such a late date that it is almost impossible to ascertain the reason for the variance, and if you can, it is too late to prevent a loss which

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has already occurred. If, however, you have established standard costs for the various operations covering the cost of the article, you can check the actual cost of each operation or groups of operations daily or weekly and so find out fairly easily the cause of any increase in cost and eliminate the trouble and so save the money before it is spent instead of waiting two or three weeks and find out the money has already gone.

Productive Labour

Once standard costs have been established for each operation or groups of operations performed by the productive departments, then standing order numbers are assigned to each, and it is to these numbers that labour costs are charged; irrespective of whether each operation is performed on one particular article or a dozen different articles, the costs are accumulated by the operation number. The quantity produced for each operation, the amount and time spent on each operation number is reported daily, and the standard cost, according to quantity or time, is ascertained daily or weekly and compared with the actual cost and the variation percentage obtained. The standard labour cost of any article can be ascertained by applying the standard cost for each operation, and the actual cost can be obtained by applying the variance percentage by similar calculation.

Major variances on any operation should be investigated very carefully as it will be found in the majority of cases that such variance is caused by something which may be termed accidental to the operation, such as new help, delay in obtaining material, wrong material or substituted material, and the variance should more correctly be spread over all operations rather than a particular operation. This is one point where the keeping of actual cost by job numbers does not reflect a true story.

The variances between standard labour costs and actual labour costs should be transferred monthly to cost of sales or profit and loss account.

In comparing actual and standard labour costs, special known variances such as changes in labour rates since standards established should be segregated so as to separate between labour efficiency variance and labour rates variance, as the former is the measure of efficiency only.

An important point which should not be overlooked with regard to operation costs is where a permanent cost reduc-

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tion is made in any operation, similar operations should be studied to see whether or not cost reductions can also be made.

Materials

The measure of manufacturing efficiency with regard to productive materials is the quantities used and not the cost of materials, as the costs are a measure of efficiency of the purchasing department, consequently the establishment of standard costs for material for use in costing eliminates from the manufacturing picture the material cost fluctuations, and increases in productive material costs in manufacturing show immediately that increased quantities have been used and that explanations are required. This would not necessarily be the case where actual material costs are used, as investigation might show that the quantities used were according to standard but that there had been an increase in the actual cost of a basic material. Material requisitions on the Stores for raw materials to be used on production orders are charged against the standard operation number for which the material is used and the store knows exactly how much material is required for the quantity to be manufactured through the particular operation, which is a check against wastage or spoilage as additional authority should be obtained before additional material can be requisitioned.

The difference between standard value of material actually used and the standard value of material required for the production quantity should be transferred to cost of sales or profit and loss each month.

Manufacturing Expense

The practice of establishing standard loading rates for manufacturing expense has been in use for many years and is now a generally accepted method.

An analysis of the monthly variance, however, is of vital importance and statements should be submitted. Fixed expense charges are budgeted and spread over the various departments monthly, and the amount unabsorbed through inactivity can be ascertained by applying the percentage applicable to the standard production against the actual production, and the difference represents idle fixed expense.

Variable expenses to a large extent are controlled by the variation in production, but will not be reducible in the same ratio as the decrease in production from standard.

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Variations in the expense should be reported where of sufficient importance as to require comment.

The difference between actual manufacturing expenses and the standard loadings on production should be transferred to Cost of Sales or Profit and Loss each month.

Variances

An intelligent report of major variances of material, labour and expense as compared to the standard measurements established is of vital importance and can be set up in such detail as can be of the utmost assistance in the efficient operation of any plant. For instance, where changes in wage rates have been made without changing the standard costs, then the additional cost thereby incurred should be shown up as an explanation of a labour variance.

Control

Special accounts can be established for controlling the standard costs of work in process separately for the main divisions of material, labour and expense if considered advisable. It is not, however, absolutely essential as the actual cost of material, labour and expense can be used for accounting control and the variations ascertained by summarizing the production at both actual and standard.

Job Order System

Where a job order system is used and it is not considered desirable to change, standard costs may be established for each piece, part or finished product manufactured. The standard costs may then be used for transferring to piece, part and finished stock accounts, for checking actual cost and for costing sales. As orders are closed the variance between actual and standard cost is ascertained and summarized each month and the variance transferred to Cost of Sales or Profit and Loss. Considerable saving of clerical work and the simplification of costing, transfers and sales are the results of this application.

Process System

Where a process system is in use, standard costs may also be established for the piece, parts and apparatus manufactured, and can be used for transfer purposes, etc., as outlined for the Job Order System.

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Operation Costs

In order to obtain the greatest advantage of standard costs it is necessary to eliminate the question of actual costs on individual orders and to establish standard operation costs. By this method a standard order number is assigned for each operation or group of similar operations, to which is charged the material, labour and loading incurred on the operation or groups of operation covered by the number. The production for a given period is calculated at standard costs and compared with the actual cost for the same period and the difference represents the variance and should be analysed as between material, labour and labour loading. In other words, you obtain the difference in actual cost by the three main cost divisions, as compared with the basic cost. Any unusual fluctuation can thus be easily traced and explained. As has previously been mentioned, frequently the reasons for variations in costs are accidental to the particular operation and should be spread over a large portion of the production, consequently the products should be grouped and the variance applied as a percentage over all the cost of the production in the group.

By thus establishing standard operation costs and by collecting the actual operation costs and comparing same with the standards established you have a measure of efficiency on a step by step method and complete cost of any piece, part or article manufactured is also controlled. Where the job order system is in use the difficulty of having material and labour charged against the correct order is well known, as there are frequently several orders in the factory at the same time covering the manufacture of the same article. The standard operation system eliminates this source of error as the same standard number is always used for the same operation, irrespective of the number of production orders in process for the same article. In addition, the number of orders to which material and labour is to be charged is considerably reduced.

Another advantage of system is that detailed costs of existing operations are always available for use in estimating and establishing the cost of new products.

The cost of any article can easily be ascertained by summarizing the standard costs of the operations required in the manufacture of the article and then applying the actual cost variance.

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Physical Inventories

Where standard operations costs have been established the pricing of the annual inventories is greatly simplified. Inventory sheets can be prepared ahead of the dates set for inventory taking, and the standard costs can also be inserted. Possibly the advantage in the pricing of work in process inventory can more readily be appreciated as the standard cost of any article in process can be readily ascertained.

Cost Reduction

The use of standard operations costs and comparing same with actual operation costs is a great aid to cost reduction, as it is easy to locate the operations which are out of line with the standard cost, and further the department responsible is quickly located, and the operation costs can be watched weekly or even daily if necessary until the condition is rectified.

Sales Prices

By furnishing the Sales Department with cost specifications showing in detail the material used in manufacture with the standard costs established, and the standard labour and loading for each article, you provide a system which is of great assistance to the Sales Department in estimating and checking sales prices. The Sales Department by applying current prices to materials can quickly estimate the current cost of material and by applying the labour and labour-loading variance to standard cost can ascertain the current actual cost.

Actual Cost Variance in Relation to the Profit and Loss Account

Many Industrial Engineers and Public Cost Accountants take the stand that standard costs should be the basis of physical inventories and that no reserve is necessary against any amounts credited to Profit and Loss Account through manufacturing at less than the standard costs established, on the basis that such credit represents a profit earned in the same way as an excess actual cost represents a loss incurred. I am quite in agreement with regard to the latter, but being of a conservative mind believe that a blanket reserve should be provided on a physical inventory based on standard costs where the actual cost is less than

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the standard cost, for the reason that the standard costs are set as a basis of efficiency measurement and for control purposes, and that such basis does not change the fundamental principle that physical inventories should be valued on the books at actual cost or market value whichever is the lower. In the same way if I knew that certain items in the inventories could not be sold for the cost value shown in the inventory then I would provide a reserve to offset the loss.

General

I have endeavoured to outline some points with regard to the use of standard costs in business, but it should, of course be remembered that the use of standard costs does not mean that a Company's cost problems are at an end, any more than that the establishment of a budget system for a company means its business problems are solved. Both budgets and standard costs have their respective places in business as measures or standards by which progress and efficiency can be followed, their intelligent use with modifications where necessary are undoubtedly of great value to business executives to-day when *cost reduction* is the password in business, and in this term I not only include manufacturing cost, but all the various costs of doing business.

Employment

MEMBERS of the Society who are looking for new positions, are invited to place on file particulars of their experience and qualifications, and at the same time to indicate their wishes as to place of employment, salary or any other conditions. Such information will be confidential, except for the purpose for which it is sent in.

In the past few months several openings have been brought to the attention of the Society, and as Cost and Management is published only once a month, there has frequently not been time to bring them to the attention of our members in that way.

Address this information to The Canadian Society of Cost Accountants, 81 Victoria Street, Toronto, Canada.

Costs and Cost Keeping

By W. H. BROWN

*Accountant, Department of Public Highways,
Province of Ontario*

(Before the Canadian Road Builders' Association, Toronto, May 18.)

THE subject that I have been asked to take to-day—"Costs and Cost Keeping"—is probably one of the most interesting to those actually engaged in this kind of work; at the same time it is, no doubt, one that can be made very dull and uninteresting. To members of your Association, Costs are of the first importance and embrace so many angles that it is almost impossible to tackle them all in one paper and before touching the actual subject I would like to survey very briefly the situation as I see it.

A contractor may be defined as one who agrees to execute certain work for a specified or definitely ascertainable sum. The work may consist of performing labour alone, or it may include the furnishing of materials as well as labour. The same broad principles of accounting apply to all contractors, regardless of the industry in which they are engaged. It is the purpose here to discuss the principles as they pertain to the accounts of contractors in the road building business.

In recent years great changes have been wrought in the business methods of contractors. In the vitally important department of estimating, the contractor of earlier times relied solely on his own judgment, which was formed from personal experience. His work was supervised by practical men, few of whom had the advantage of technical training. In many instances his methods of financing were crude; collections being made from principals who had funds to spare, and payments, other than pay-rolls, being made when there was a surplus of cash. Accounts with principals were considered all important, and constituted the main object of account keeping. Most of the costs were approximated, owing to the absence of accurate cost records. Hence serious deviations from original estimates could not be learned until the completion of the work, and then they could not be traced, nor could responsibility for them be accurately placed.

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Operating in this random manner, the contractor made, and lost money, and so long as his competitors operated in the same way and his gains exceeded his losses he was able to continue in business. The large profits made in some instances attracted a new and more aggressive element to the business and competition became keener. The latter day contractor combined his own technical training with the experience of practical assistants, with the result that estimates were prepared and submitted on a scientific basis. The business of the older contractors declined as a result, and in order to obtain work at all they were obliged to reduce their bids until they found that in the cases where they were successful bidders, losses usually resulted.

While accurate costs are of great importance to the individual institution, they are of no less importance to the industry as a whole. The manufacturer who obtains contracts by underbidding his competitors, with a price on which he will lose money, not only ruins his own business but destroys that of his competitors. This form of competition is the most dangerous and the most greatly to be feared, since it rests, in most cases, on ignorance. It is little consolation to the manager whose costs are accurately obtained to see such competitors go into bankruptcy; for, as fast as they disappear, others equally ignorant take their place. Yet this state of affairs is far too common.

In a competition that came under the writer's observation recently the highest bid was nearly fifty per cent. higher than the lowest. After making allowance that the lowest bid may contemplate scant fulfilment of the specifications, and that the highest may be simply hopeful advertising, the only reasonable explanation that can be offered for such a great range is ignorance of basic cost-finding principles. Any one who has had experience in opening competitive bids will testify to the wide divergence in prices that usually appears in such competition. It is for reasons such as these that the intelligent contractor often finds himself confronted with the fact that his bid must be based on market prices and not on his costs. It is no use to bid higher, unless he has a superior article the merit of which commands the trade irrespective of price. On standard articles the "Trade will not stand" the higher price. Even here his only hope of succeeding is to know the true cost and to try by better building to so reduce it as to leave him a margin of profit.

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Furthermore, it is only too often held that cost-finding methods are secret matters that should be kept from the eyes of competitors. No doubt it may be good business policy to keep actual costs secret, but the widest publicity should be given to cost-finding methods if for no other reason than that of educating one's competitor in such methods as shall tend to fair competition. This is now clearly recognized in many fields of industry. The National Machine Tool Builders' Association recognized this important principle some years ago and took active steps toward uniform methods. It would pay all competing industries to do likewise and to publish freely the correct methods by which the costs of their products are obtained. The manager who offered to send his expert accountant, at his own expense, to teach competitors his system of cost finding was a man of keen business ability and not simply a philanthropist.

It is true, of course, that many enterprises make money with the crudest kind of cost-keeping systems, but where such is the case there are always advantageous conditions the continued existence of which cannot elsewhere be assumed. Many plants, also, make money in spite of antiquated machinery and methods, either because of local advantages or because lack of competition allows large profits. Strong leadership may often compensate for material disadvantages, but such favouring conditions may not be so easy to maintain in the future. As industry grows, competition becomes ever keener in all branches of life, with the consequent requirement of a more exact knowledge of the details of business. And, as any enterprise increases in size the methods based merely on personal observation become increasingly inadequate.

A grocer who fixed the selling price of sugar with reference to that of his competitor, and not with reference to what it had cost him, would be considered as having adopted a decidedly unsafe policy. And yet this is a common method of fixing prices in the manufacturing field. Many manufacturers often persist in paying dividends out of capital simply because they do not know what their selling price ought to be but have fixed it either by that of some competitor or by some rule of thumb. Enterprises of this kind collapse like houses of cards when dull times arrive, and constitute, no doubt, a large proportion of the four-fifths of the failures which are due to personal incompetence. Accurate knowledge of the cost of production is an absolute necessity,

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and the detail in which it is required to know these costs grows daily with the growth of enterprises, the increase in competition and the development of new methods of management.

Each business requires individual study. It is obvious also that no particular cost-finding system will apply to all forms of industry, since industries vary so widely not only as regards the character of the work they are conducting but also as regards the manner of their organization. The information that the cost system should gather, and the manner in which this information should be presented, will also vary widely in different enterprises. The cards and forms which are admirable for one kind of work are useless, therefore, in others. The general underlying principles of cost finding, are, however, universally applicable, and if the principles are clearly understood there is seldom any difficulty in developing cards and forms suitable to the work in hand. Many good suggestions can be obtained by a study of the blanks and forms found in current practice, but the presentation of too great a variety of such documents tends to obscure basic theory.

In estimating the cost of production there must be considered not merely wages and material, interest and rent, repairs and renewals, but in addition some allowances must be made for the diminished value of the fixed assets due to gradual loss of serviceability. Consequently, profits are not determined until after allowance has been made for depreciation. *Depreciation* is not a *disposition* of part of the *profits* but an *expense* without which *profits* can never be learned. The principle is clear. Materials consumed in manufacturing a commodity, as for instance fuel or oil, are, of course, an element of expense. This is so because an item of wealth disappears and its effect can only be to diminish the net wealth. Its loss is in other words an expense. In the case of fuel the loss is immediate, and is, therefore, charged at once to expense. Exactly similar is it with the productive instruments whose use extends over a longer period. The article consumed in a single use must be considered an expense of the current production, the temporary structure or the tools lasting only a year are charged against the production occurring during the year. The more permanent form of assets serving for productive use during a period of years should be spread as an expense during the period of use, whether that be five or fifty years.

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The immediate effect of allowing for depreciation is properly to equalize profits during different years. Otherwise the total cost of the machine must appear as an expense of the year when it finally proves unserviceable. At that time, its value ceasing, it can no longer appear in the inventory. The amount of Goods on hand being thus diminished, there must needs be a subtraction from the Profit and Loss, or other Proprietorship account. But if the original value of the discarded machine, say \$20,000, was continued on the books throughout its entire life of 20 years it may roughly be said that the proprietors in the last year showed an excessive loss of \$19,000, while the proprietors during the preceding 19 years overestimated their profits by the same amount. Such a procedure is improvident where there is no change in proprietors or stockholders; it is inequitable where the personnel has changed; in all cases it is dangerous to the creditors who, up to the last year, have not been shown the true condition of the company's assets.

Depreciation should cover all decline in value due to the use of productive assets. Not less than this is required by accounting prudence. But while this standard is frequently not reached, it is not unusual to find corporations charging to depreciation sums far in excess of the actual decline in value. Yet such excessive depreciation offends the very principles of accounting. To charge too much to depreciation is no less a deviation from accuracy than to charge too little. Yet the two transactions are very differently regarded by the public and by the profession. To charge too little is considered dishonourable; to charge more than enough is considered a sign of conservatism, and is not only done by the most reputable corporations, but where this occurs the action is very frequently praised by the financial writers.

The effect of excessive depreciation is to conceal the amount of profits, to create what is known as a "Secret Reserve." Depreciation is normally charged to expense or at least to Profit and Loss. If, in fact, there has been no actual decline in value, the result is that the balance sheet shows an understatement of both assets and profits. The questions involved are, therefore, those of undervaluation of Assets and Secret Reserves. It suffices to call attention to the fact that an excessive depreciation, while generally condoned, is still a divergence from an ideal accounting and its effect is the establishment of a Secret Reserve.

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General Principles

Cause of depreciation may be generalized under three heads:—Wear and tear, obsolescence and inadequacy. The specific causes are very numerous, and there are many factors affecting its rapidity and extent. Among these are:—Quality of construction, adequacy to meet future demands, method of operation, repairs and renewals, climate, etc. In case of such intangibles as patents, copyrights, and leaseholds, progress of depreciation may usually be assumed to be in direct proportion to expired time. Matheson gives the following causes of depreciation:

1. Wear and tear.
2. Tenure of holding.
3. Permanency or steadiness of industry.
4. Exhaustion of raw materials.
5. Obsolescence due to new inventions, new product or better ways to make the same product.
6. Troubles and catastrophes not insurable.
7. Fluctuations in trade.
8. Inadequacy.

Destruction is the law of nature. Even so-called permanent improvements, such as buildings, are all subject to ravages of time, which Marshall aptly defines as "The complex of destructive agencies." All machinery is on an irresistible march to the junk heap, and its progress, while it may be delayed, cannot be prevented by repairs.

This obvious economic fact is of momentous import to accounting, although full recognition has not been given to it in general practice. It implies that, in valuing all fixed assets, account must be taken of the lapse of time, and even in the case of machinery giving no evidence either of use or misuse, the basic fact that it is a year nearer its inevitable goal—the scrap heap—is an item of which technical account must be taken.

The mechanical aids used on each contract vary from small hand tools to large machines, such as steam shovels, hoisting machines, pile drivers, cranes, etc. In order that the general office may know at all times the location of such equipment it is desirable that a complete record of each item be kept, and an account opened for each large piece of machinery and group accounts for the smaller pieces. This record should contain full particulars of the piece of equipment, and care must be exercised to see that the cost includes

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every item of expense which enters into the laid down value. A favourite omission in this respect is the handling charges for unloading the equipment when this is not included in the purchase price.

Now let me point out that one of the most important points to be taken into consideration in figuring your costs, and the one that is most frequently neglected, is that of depreciation. It should be kept very clearly in mind that depreciation is always an expense. No job should be estimated without proper regard to the depreciation of the equipment of the equipment involved. Always remember also that your equipment is depreciating in value, whether it is being used or not.

We now come to what is perhaps the outstanding item in estimating the cost of any job, i.e., burden or overhead. There are a very large number of items that enter into the overhead costs of the contracting business, some of which can very easily be overlooked, but it is well to bear in mind that these very items will perhaps make all the difference between profit and loss. Never neglect to take into consideration: Depreciation on your Equipment, depreciation of your offices and furniture, salaries and expenses of your office staff, interest on overdrafts, interest on your loans, insurance and workmen's liability charges, taxes, in fact every item of expense that cannot be applied to a specific job is an item of overhead. The time of the man who writes the pay cheques for head office is as much a charge to overhead as the foreman's time is a charge to the job he is engaged upon. Every job you estimate on must bear its portion of these costs in order that you can be assured that your figures are as nearly correct as an estimate can ever be. More contractors have gone to the wall through leaving out overhead charges than from all other sources combined.

A very important matter in the administration of the contracting business is a proper cost accounting system. It must be realized that if you have the exact cost of a job you are in a much better position to estimate on any future work of a similar type than you would be without it. Cost Accounting records need not be cumbersome, in fact the simpler they can be made the more successful they will be. Keep the cost of each job separate and do not forget that it is not complete without its share of overhead. Also remember that the charges for moving your equipment to the ground must always form a portion of your costs.

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If you sublet any portion of the contract keep proper records of this portion of the work, because after all you are responsible.

In Conclusion

Contractors' accounts to be effective should at all times show the cost to date of all work in progress and provide the means of comparing these costs with the estimated costs used in the preparation of the bid, and also with the contract price of each subdivision. Information should always be available as to the amount of money drawn and what hold-back is retained by the principal. The cost records should be so constructed as to disclose the profit and loss on each subdivision of the work. The General Ledger accounts should be so arranged to supply readily the data required for statements of actual assets and liabilities and of profit and

MEMBERSHIP

The name of A. J. Mouncey, The Norton Company of Canada, Ltd., Hamilton, Ont., should have appeared in the membership list which was published in our September issue.

The following are new members of the Society:

Toronto

F. E. Brooks, Canadian National Carbon Company, Ltd., Toronto.

Montreal

Geo. Whittaker, 1122 Beaver Hall Hill, Montreal.

Wilfrid Turcot, Central Y.M.C.A., Montreal.

J. A. Fillion, C.A., 3426 Avenue Laval, Montreal.

James J. Rosevear, 616 Shaughnessy Bldg., 407 McGill Street, Montreal.

H. K. S. Hemming, C.P.A., 3436 Durocher Street, Montreal.

Clement Tremblay, Ayers, Ltd., Lachute Mills, Que.

E. Caron, 4289 St. Andre St., Montreal.

C. R. Fontaine, 287 Centre St., Montreal.

Wilfrid Holmes, 54 Victoria Ave., Montreal South, Que.

Jean Valiquette, Anderson and Valiquette, 84 Notre Dame St. West, Montreal.

Hamilton

Ray W. Doering, Frost Steel & Wire Company, Lottridge St., Hamilton.

Geo. Redstone, Frost Steel & Wire Company, Lottridge St., Hamilton (Junior).

Robert A. Watson, The N. Slater Company, Ltd., Sydney St., Hamilton.

Winnipeg

J. Morgan Davies, 260 Bannerman Ave., Winnipeg.

H. M. Hoover, 172 Anderson Ave., Winnipeg.

Elsewhere

Maurice Willis, 1206 Pacific Street, Vancouver (Junior).

The St. Lawrence Deep Waterway

By PROFESSOR W. W. GOFORTH

(Before Montreal Chapter, April 13, 1928.)

THE progress of Canada has not been marked by the patient philosophy of Aesop's frog which waited for the fly to enter its mouth, but by a vigorous series of great forward strides. Ambition has combined with intelligent optimism to bridge her physical barriers and to transform such natural obstacles as her waterfalls and rapids into the motive energy of her industrial life. It can hardly be questioned that the St. Lawrence Deep-Waterway Project is such a potential forward step. Not even the Pacific Railroad in embryo received such exhaustive study and expert scrutiny as has been lavished upon this greatest of current national problems. The dream of providing an interior civilization of 45,000,000 people, covering half a continent, with a more efficient artery of communication to the markets of the world, has begun to assume tangible form. Its engineering feasibility is definitely established. Substantial agreement already exists between the two governments concerned on all major issues involved. The enormous electrical by-product of the waterway is four-fifths Canadian. Our share, amounting to nearly 4,000,000 h.p. is fully conceded by the United States, as shown clearly in the recently tabled correspondence between our Minister at Washington and Secretary Kellogg.

St. Lawrence Deep Waterway Awaiting People's Decision

It now remains for the people of Canada to examine closely the various factors of national interest involved in this project, and to express an intelligent opinion thereon. Inordinate haste and immature decisions based upon a brief and superficial study are certainly to be avoided. At the same time public apathy and indifference, or unreasoning opposition and indefinite procrastination may be equally harmful. It is for this reason that the following factors in the problem are set forth, in the light of recent study and investigation, in the hope that they may prove useful in the formation of sound and constructive conclusions.

THE ST. LAWRENCE DEEP WATERWAY

Chain Complete But for One Link

(1) *The Navigation Factor.*—It is not generally realized that, but for the important section between Prescott and Montreal, the St. Lawrence Deep Waterway is already almost an established fact. Other restricted navigable sections such as the St. Mary's River (U.S. "Soo" canal), the channels between Lake Huron and Lake Erie, and the Lower St. Lawrence below Montreal already provide for from 20 feet navigation in the upper to 30 feet in the lower section. The New Welland Canal of 25 feet depth is nearing completion. There remains then only one important physical barrier to through navigation, in which at present canals and locks of only 14 feet depth are provided. This situation has already reacted most unfavourably on the all-Canadian outlet to world markets, for the "break" in Lake Erie to through navigation has had the natural effect of annually diverting 140,000,000 bushels of Canadian wheat alone through the United States Atlantic ports, the bulk of which, under the proposed plan, would follow its natural and cheaper outlet through Canada.

Danger in Delay

The early completion of the New Welland canal will not eliminate but merely transfer this leakage. Oswego will replace Buffalo with prospects of an even greater diversion when this new route to Albany and the Hudson River has become fully established. *The real danger lies not in building an improved St. Lawrence Waterway, but in failing to build it.* The economic loss of the present ill-balanced St. Lawrence route is amply demonstrated by the fact that a bushel of wheat moves from Fort William to Port Colborne for 3 cents, while the rate from this Lake Erie port to Montreal, only half the distance of the former, is approximately 6.6 cents. This results inevitably from the higher cost of operating 2,000-ton lower lake steamers as against the much larger boats of the upper lakes. What this gain of approximately 5 cents per bushel will mean to the Canadian farmer and to all those dependent on him is considered in a later paragraph.

Montreal Permanent Ocean Liner Terminus

There is another phase of the navigation factor, however, that has largely escaped recognition, but which still further augments the advantages of the interior Canadian

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shipper, whether industrial or agricultural. It also enhances the competitive position of Canada's metropolis and ocean port, Montreal. It is now generally agreed that the great ocean liner and the larger lake steamer will each maintain its field of operations. Specialized adaptation to their respective functions and environment will still retain for Montreal and Quebec their natural positions as intermediate ports of transshipment.

The Tramp Steamer and Its Relation to the Problem

The "Tramp" steamer presents a different problem. It is tied to no route. It seeks a cargo above all where there is the best prospect of two-way traffic. It exercises a salutary check on the rate tendencies of liners, especially with respect to bulk commodities such as grain. New York's ability to quote much more favourable rates to Liverpool than Montreal is only partly a question of marine insurance charges. It is largely because New York is peculiarly fitted to be the tramp centre or charter market for the American Atlantic Coast. Standing at the apex of a wide angle of coast line, the arms of which are studded with dependent ports, it offers the best prospects of a diversified two-way traffic, which is the special object of the tramp steamer. Montreal, on the other hand, stands isolated at the end of a narrow angle of river and gulf, with no "dependent" ports, except Quebec. This isolation will be quite reversed with the completion of the deep Waterway. The tramp steamer unencumbered with the high operating costs of the liner will be enabled to draw upon a group of lake ports whose collective traffic is even greater than that of the dependencies of New York.

Increased Traffic on St. Lawrence Route

With an increased differential in transport rates in their favour, and the greatly augmented water-borne traffic which has ever resulted from it, the chain of Canadian and American ports scattered along the Great Lakes may truly expect to become ocean ports. Not only will the advent of the tramp introduce a new and useful factor in the transportation organism of the St. Lawrence, but it will undoubtedly do much towards adjusting lower rates on grain and other commodities and help to restore the balance between Montreal and its great American rival as Trans-Atlantic terminals. This factor affords a possible explanation for the

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apparent hostility of the established liner interests in Montreal towards the Deep Waterway.

Stimulus to Prairie Agriculture and Land Settlement

(2) *The Agricultural Factor.* — It is clear that the value of agricultural land is based not upon the gross, but upon the net value of its product. Over a period of years the net return of the Western Canadian farmer has not averaged more than 10% of his gross production. An increment of 5 cents per bushel or at least a substantial portion of this amount would, therefore, from the equivalent experience of other regions when provided with improved facilities of transport, result in from 15% to 30% increase in farm land values, in the Prairie Provinces, varying according to location and the availability of competitive outlets, or alternately in a substantial stimulus to agricultural settlement. The invariable law of the producer is to encourage greater diversity as well as greater efficiency of competitive outlets for his commodity. This fact is occasionally overlooked.

World Competition in Grain Marketing Demands Greater Efficiency of Outlets

The prairie farmer's chief interest in the transportation of grain, as also of his other products, is to press for the improvement and maximum efficiency not only of the Hudson Bay and Pacific Coast routes and terminal facilities, but also of the traditional St. Lawrence outlet. The increased efficiency of one is a more effective check upon possibly abusive tendencies of the other. There is a further point for the farmer to consider. The maintenance of his present favourable position in the grain markets of the world is very largely dependent upon forestalling any improvements in the transport facilities of rival countries by previous improvements of his own. It is the part of necessity as well as of wisdom to provide such facilities in advance of requirements, for it is an axiom of international trade that markets are much easier lost than won. Such a step as that herein proposed would undoubtedly delay and hamper the prospective return of Russia to her former dominant position in the grain markets of Europe.

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Canada to Get 4,000,000 H.P. Out of 5,000,000 H.P. on St. Lawrence

(3) *The Power Factor.*—The wealth in hydro-electric power which may be developed coincidently with the proposed navigation works on the St. Lawrence is, as already noted, of much greater interest to Canada than to the United States. Three million horsepower out of a total potential supply of five million are located wholly within Canadian territory, and may be developed without reference to our neighbour. The remainder is located on the International frontier between the Province of Ontario and the State of New York, and is to be divided equally between the two countries. The vital importance of this great untapped store of electricity is illustrated by the fact that it is almost exactly equal to the total developed hydro power in the Central Provinces at the present time. Naturally the question arises—can we ever use this extra power? If so, when and how?

Our Consumption of Electricity Doubled in Six Years

In the past six years our development of power has doubled itself and our consumption of electricity has more than doubled. While it is hardly reasonable to expect a maintenance of this meteoric pace, yet it is a conservative prediction that we shall at least maintain the addition of a similar increment in a similar time in future. In other words the share of Canada's power development which the Central Provinces may be expected to absorb should approximate two million horsepower every six years during the next few decades. Making full allowance for other hydro developments under construction or projected, we may assume from the above, that with a succession of stages each of half a million horsepower, time to coincide with the expanding requirements of industry and population, the whole of Canada's equity in St. Lawrence power may be effectively absorbed, indeed acutely needed, by 1945.

Release of Niagara Power for Western Ontario

The diversion of water from the Niagara River for power purposes has already reached the limit provided for by treaty. If industrial development and population growth in Western Ontario is not to be retarded and obstructed,

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then St. Lawrence power must release Niagara power for Westward transmission by taking over the Eastern field.

Electricity possesses the most elastic of all markets. This results automatically from the ever-widening diversity of its use, and the growing intensity of its application in the industrial and domestic spheres where it is already established. Not only in theory is over-production in the electrical field relatively impossible, but from our experience in the major developments of the past two decades—on the St. Maurice, the Niagara, the Gatineau and the Saguenay—we have found that supply invariably induces a proportionate demand. No longer then is it a choice between indefinite postponement of the project and irrevocable export to the United States. Central Canada not only can absorb, but will urgently require, in the near future all of her enormous share of hydro-electric power to be derived from the St. Lawrence waterway. Quite apart from the deductions of previous trends, there are practical reasons which confirm this.

Industrial Growth Largely Dependent Upon Power

(4) *The Industrial Factor.*—This naturally arises out of the power factor which precedes it. Again from the experience of similar developments in the past we may estimate with reasonable limits the anticipated industrial growth within a radius of 300 miles of the St. Lawrence hydro sites, as also in Central and Western Ontario from the concentration of Niagara power in this region. Two and a half to four billion dollars of new Canadian factories will utilize the power so provided, with a proportionate stimulus to commercial activity both within and outside this area. It is not claimed, of course, that this industrial growth will take place immediately after the power is developed, but the cumulative process of manufacturing expansion will be started even before the power is available. The enormous requirements of structural steel, of concrete, of machinery, and a multitude of other related products, which the navigation and power works will require in their construction stage, total nearly \$400,000,000. This will provide a powerful stimulus not only to the industries directly affected, but indirectly to all producers. Nor will the end of this seven to twelve year period of construction mean a slump backwards to depressed conditions.

Construction Period Not to be Followed by Traditional Slump

Normal increase in population and in domestic and other requirements, plus the new industrial growth dependent upon the developed power will sustain the abnormal demand of the period of building even after it is over. One of the chief problems of Canada's economic life consists of the great seasonal fluctuations in employment. For this reason industrial development must take place coincidentally with that of agriculture because it provides the best opportunity for the regular employment of labour. Among the many large power-using industries which this development will attract, the metallurgical and electro-chemical groups offer the brightest prospects. The Lower St. Lawrence Valley enjoys exceptional advantages in this field, partly due to its central position with respect to large scale mining developments in Ontario and Quebec, and partly from its unequalled strategic position with regard to railways and other forms of transport. The flour-milling industry of Canada which has languished since the Great War will regain its natural functions and re-establish its position with the retention of Canadian wheat traffic by the all-Canadian route. It is now generally realized that industrial precedence is to the countries with cheap and abundant power. The rapid electrical development which Canada has witnessed during the post-war period has undoubtedly played a leading part in restoring prosperity and re-establishing our competitive advantages in foreign markets.

Gain in Population Inevitable

(5) *The Population Factor.*—A reliable ratio of population to electrical development has been worked out, which demonstrates that the ultimate mass of workers and dependents which the proposed St. Lawrence power works and the accompanying industries will support, reaches a staggering total of from four to seven million people. This population growth will, of course, not be confined to a single locality such as the lower St. Lawrence Valley, but like the ripples on the calm surface of a pool will extend into every habitable part of the Dominion. What more effective means could be utilized for retaining the Nation's native sons, and of securing the substantial tide of immigration which is so much desired but which has so consistently eluded the grasp of successive governments. The construction of the St. Law-

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rence Deep Waterway has certain distinct advantages over other great transportation projects of Canadian history.

Ideal Stimulus to Immigration

The vast armies of immigrant labourers which constructed our trans-continental railways were not very much attracted by the prospects of farming which resulted from their building of roadbeds and laying of rails. A large proportion drifted back to Europe or crossed our southern border, for lack of sufficient industrial employment in Canada. The St. Lawrence Deep Waterway, however, induces an industrial expansion from its power by-product which will give to the immigrant labourer from Europe a field of employment more adapted to his ability and preference. With the joint impetus, which the St. Lawrence will provide, for agriculture on the one hand by an increased margin of return, and for industry on the other by supplying the basic mechanical energy required at reasonable cost—the population of Canada should not only grow in numbers, but attain a truer balance between farm and factory—between rural and urban life. We have “caught up the slack” of the post-war years of depression, and there are numerous indications that Canada is entering upon a new period of material expansion, if the proper impetus is provided.

Canada's Railways Stand to Gain Far More Than They Lose

(6) *The Railway Factor.*—It has been claimed by its critics that the St. Lawrence Waterway will strike at the solvency of the Canadian National Railways by robbing this great public utility of its traffic. The exact opposite is the truth. In the first place, grain, which forms the bulk of the Lakes to Montreal traffic, is only an incidental item in rail receipts East of Fort William. The net return of this eastern grain traffic to the Canadian National does not exceed \$200,000 in the average year. Furthermore, this traffic does not reach any substantial proportions until Great Lakes-St. Lawrence navigation is closed, a condition which will not be materially changed, if at all, by the building of the Deep Waterway. The great bulk of railway grain haul is west of Fort William, and this should be considerably increased by lowering the cost of transporting it to World markets, a factor which the St. Lawrence Deep Waterway provides. But grain is not the only item which the railway will gain. During the construction period which will last from seven to

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twelve years, as mentioned above, hundreds of millions of dollars worth of goods will have to be transported to the St. Lawrence Valley to build the necessary works, and temporary blockages of the St. Lawrence canals while in process of improvement will divert considerable tonnage to the railways.

Traffic Destiny Bears Definite Relation to Population

It has been demonstrated that for every head of population in Canada ten tons of railway traffic are originated every year. It is also shown that this ratio is practically the same in every part of the Dominion. This means that with the rapid stimulus to population growth which the electric power developments of the St. Lawrence will provide, the Railways will enjoy a progressive addition of new traffic reaching at least 40,000,000 tons per year within a reasonable time after the completion of the whole project. The best proof of the above is the following statement by Sir Henry Thornton, President of the Canadian National Railways—"The St. Lawrence Deep Waterway will build up traffic and assist in the industrial development of the Dominion, and in the last analysis we will find that we have gained very much more than we have lost. It is inconceivable that a barrier shall be permitted to exist between the area of this great inland sea and the ocean." It is distinctly probable that, as soon as the Deep Waterway project be fairly embarked upon, the Canadian National Railways will become a revenue-producing asset of the public instead of adding to its burden, as it has hitherto.

No Additional Burdens to Canadian Taxpayer

(7) *The Financial Factor.*—As recommended to the Canadian Government by the National Advisory Committee, the Dominion should pay a share involving a little more than half of the cost of all improvements on the Great Lakes and St. Lawrence route, past, present, and as in future necessitated by the completion of the Deep Waterway. Of this Canadian share, stated as \$400,830,000, we have already expended \$173,000,000. Deducting the cost of works already provided for in completing the New Welland Canal, we have a remainder of \$200,000,000. Yet this seemingly large expenditure must be balanced against a \$400,000,000 asset arising from the four million horsepower fully developed which Canada will receive automatically as part of her

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share. This looks too good to be true. Possibly it is, for it is merely the basis of future bargaining with the United States. Yet with certain reservations it has already been accepted by the American Government as a suitable basis for negotiation. The net result is that Canada will not suffer a single cent of extra debt if the St. Lawrence Deep Waterway is constructed.

The American Bogey

(8) *The International Factor.*—Among other objections raised the bogey of American aggression is probably the most widely discussed. It may be divided as follows: (a) The possible loss of our electric power by export to the United States; (b) The possible insincerity of the United States in desiring to build and maintain an improved highway of transportation via the St. Lawrence, to tide water—i.e., that the American government would deliberately sabotage the navigation works which they will partially control at the International section of the St. Lawrence and irreparably injure navigation on the lower reaches of the river; (c) That they will be tempted to take full control of the whole St. Lawrence outlet, by annexation or otherwise, as they did in the case of the Panama Canal Zone; (d) That the United States cannot be trusted to keep a treaty, the Boundary Waters Treaty of 1909 being cited as an example.

Kellogg's Emphatic Declaration Against American Interference With Canadian Power Rights

The first objection regarding the export of power is disposed of once and for all by the declaration of the National Advisory Committee, on the one hand, which states that they "are in complete accord with the feeling throughout Canada that export of power should not be permitted," and on the other by the official endorsement of this principle by the United States Secretary of State. These are his words: "The United States fully recognizes the right of the Dominion of Canada to the ownership and use of the Canadian share of the power which may be developed on the international section of the waterway as well as to all that developed in the national section, and it recognizes also that the disposition of the power is purely a domestic question. It recognizes further that this share is an inherent attribute of Canadian sovereignty, irrespective of the agency by which the power may be developed."

Navigation Only Real Motive of U.S.A.

The doubts expressed concerning the sincerity of the United States in pressing for navigation as the paramount issue naturally disappear with the disposition of the power question, for is it conceivable that the twenty-two states of the Union with a collective population of 40,000,000 that are clamouring for this more efficient route to tide-water, are to be sacrificed for a mere five million or so that lie within transmission range of the power? This objection even presupposes that power interests are contrary to those of navigation, which is absolutely false.

We Surrender Nothing

The third so-called "danger" loses its force when we find that by the treaty of 1871 the United States already has inalienable rights of navigation on the St. Lawrence River which become no greater or less if we choose to improve it. We are doubly protected if, as the Advisory Committee suggest, we pay *something more* than our share. This "*something more*" becomes a "*quid pro quo*," value given for value received, and should be stipulated in the treaty as an extra consideration granted to the United States in return for an absolute and perpetual guarantee of non-interference with Canadian territorial rights and sovereignty.

The Treaty Record of the U.S.A.

The last mentioned objection, namely, that the United States cannot be trusted to keep a treaty, is as false as it is misleading. There is no case in history of the United States deliberately breaking a specific solemn treaty obligation once ratified by Congress. It is true that glaring ambiguities in boundary treaties, made before we had attained our present exact knowledge of geography, were often subsequently compromised to our serious disadvantage, but this did not entail any lack of honesty on the part of the United States. It was simply shrewd business sense. We have learnt our lesson to be more specific in future. Furthermore we can hardly blame anybody but ourselves that the 1909 Treaty specifically excluded from its application all then existing diversions of Great Lakes water, including nearly 8,000 cubic feet per second by Chicago. We certainly have a legal claim to redress for this piracy of common wealth by

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the Illinois city, but this is not a question of a violation of treaty by the United States. It is encouraging to note that the Chicago Sanitary District is now carrying out rapidly a programme of scientific sewage disposal through land plants which within a decade at the most will reduce the present diversion to a negligible figure.

St. Lawrence Problem Requires Immediate Solution

It is now high time that the intelligent citizens of Canada should study, without prejudice, this great project of National development and, if it appears to them sound, to press for its completion. Already the St. Lawrence canals have reached 66% of their capacity, according to the Montreal Harbour Commission, and at the present rate of traffic growth will have reached a completely "choked" state by 1935. This would mean very serious results. Not only would much traffic be forcibly diverted through the United States, but it would no longer be subject to competitive conditions. It would be charged all that the traffic would bear, with corresponding losses to the Canadian farmer and trader. Other evidence adduced at the recent Senate enquiry indicates that traffic conditions are already seriously congested during certain periods of the navigation season. On the other hand a far-sighted provision of the Deep Waterway, even before its necessity becomes acute, would do much to strengthen our East and West bond of Nationhood. The depressed coal fields of Nova Scotia would find an extended market Westwards from Montreal, as would the lumber of New Brunswick and Quebec. The Prairie Provinces cannot but gain by a cheaper route to world markets, and British Columbia from stimulated inter-coastal trade. Ontario and Quebec, especially that part of them which encircles the St. Lawrence Valley, should become, as a result of the power development and its accompanying manufacturing expansion, coupled with cheaper transportation, the centre of economic gravity for the New World.

New Books

ONE hundred and twenty Graduated Exercises in Bookkeeping. By Robert R. Thompson, M.C., V.D., A.C.A. (England and Wales), C.A. (Canada). 276 pages, including index. Price, \$1.50 per copy. Published by Sir Isaac Pitman & Sons (Canada), Ltd., 70 Bond Street, Toronto, Can.

Where both author and publisher are so well known to the accounting profession in Canada, a good reception for a book of this type is assured. Col. Thompson is Professor of Accountancy in the School of Commerce, McGill University, a member of the Board of Examiners for the Society of Chartered Accountants of the Province of Quebec, a vice-president and Chairman of the Examining Committee of the Canadian Society of Cost Accountants, and Examiner in Bookkeeping for the Leaving Certificate for the Protestant Board of School Commissioners, Montreal.

This book covers both double and single entry bookkeeping, and partnership, manufacturing and departmental accounts. In his preface the author expresses his belief that "practice makes for perfection," and the book contains a series of graduated groups of exercises, arranged so as to outline a method of instruction which the author and other instructors in bookkeeping and accounting have found very successful.

After a foreword to teachers and students as to method of instruction, the book gives, in a few pages, "Principles and Definitions of the Foundations of Accounting." Then there is a table of exercises and general notes for guidance. The exercises themselves comprise over 200 pages of the book, and at the end there is an index.

The author begins his definitions with "Ledger Account," and the first exercises are applications of double entry in ledger accounts. Then he introduces the student to books of original entry, from a single journal to the cash book, sales journal, purchases journal and other types. Different rulings for the cash book are illustrated. Then the various ledger accounts are developed, and along with

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them such problems as accrued interest, bad debts, consignments, etc., are handled.

According to the author's experience, students are best able to understand single entry as the double entry system with certain sections omitted, and it is from this angle that single entry is presented in the book.

Chapter Programmes

MONTREAL

1928

- Sept. 27—A few words on "Corporate Matters," by W. H. Coverdale, B.A., Dr. Sc., LL.D., Coverdale & Colpitts, New York.
- Oct. 11—"Instalment Plan, from the Economic and Social Point of View," by Dean Henry Laureys, Director of School of Higher Commercial Studies.
- Oct. 25—"Costs and the Incidence and Incidents of Taxation," by L. Belanger, C.P.A., C.G.A., Past President, Canadian Society of Cost Accountants.
- Nov. 8—"Automobile Budgeting and Cost Accounting," by J. E. Caruthers, Durant Motors of Canada, Ltd., Toronto, Ont.
- Nov. 22—"Costs in the Textile Industry" with Film Exhibit, by F. G. Daniels, President and Managing Director, Dominion Textile Company, Limited.
- Dec. 6—"Cost Accounting in the Rubber Industry," by J. Graham Barrow, Factory Auditor, Dominion Rubber Company, Limited.
- "Study of a Balance Sheet" with slides, by L. P. Lortie, C.A., C.P.A., Lortie, Dufresne & Company.

1929

- Jan. 24—"Accounting Control in the Rubber Industry," by H. P. Nellis, Asst. Treasurer, Dominion Rubber Company, Limited.
- "My Experience of Costing in the British Army, and the System Prevailing at the Present Day." By A. Bailey, Accountants Department, Northern Electric Company, Limited.
- Feb. 7—Film "The Age of Speed," by The Norton Company of Worcester, Mass., with address by A. S. Merrifield, Head of Cost Division of the Norton Company.
- Feb. 21—"The Municipal System of Montreal and its Departments," by G. E. Saint Pierre, K.C., Chief Advocate of the City of Montreal.
- Mar. 7—"The Scope of Statistical Method," by Valmore Gratton, B.A., L.S.C., Manager, Societe de Placements du Canada.
- "The Installation and Control of a Modern Plant Ledger," by J. P. Masterson, Cost Accountant, Canadian Industrial Alcohol.
- Mar. 21—"Depreciation," by H. E. McCrudden, A.M.E.I.C., Inventory and Cost Engineer Bell Telephone Co. of Canada.
- Apr. 11—"Income Tax," by C. S. Walters, C.P.A., L.A., Commissioner of Income Tax, Ottawa.

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TORONTO

1928

- Oct. 10—J. E. Carruthers, Durant Motors of Canada, Ltd. Opening Remarks.
—W. B. Smith, Burroughs Adding Machine Company. "Office Machine Application and its Relation to Cost and Accounting Problems."
Oct. 24—W. R. Hodgson, Industrial Engineer of The Canadian Kodak Company. "An Outline of the Bedoe Point System."
Nov. 7—H. E. Guilfoyle, C.A., Clarkson, Gordon and Dilworth. "Interpretation of Business Statements."
Nov. 21—A. E. Keen, C.A., Thorne, Mulholland, Howson and McPherson, Hamilton. "Distribution of Administrative and Selling Expenses."
Dec. 5—R. W. Gifford, General Superintendent of Factories, Massey-Harris Company, Limited. "Costs From an Executive Standpoint."
Dec. 19—Moving Picture Film Illustrating operations of the Dominion Textile Company, Limited, accompanied by an address on Cost Accounting by a Senior Officer of that Company.

1929

- Jan. 23—Prof. R. R. Thompson, C.A., McGill University, Montreal. "A General Review of Accounting Practice."
Feb. 6—Arthur Thormahlen, Durant Motors of Canada, Limited. "Plant Engineering and Its Relation to Production, Time Studies and Costs."
Feb. 20—M. B. Folsom, Eastman Kodak Company, Rochester, N.Y. "Advantages of Thirteen Period Calendar."
Mar. 6—H. A. Shiach, C.A., Rutherford Williamson and Company. "Modern Chain Store Costs and Accounting."
Mar. 20—Annual Dinner—Announcement later re speaker, etc.

HAMILTON

1928

- Oct. 17—Opening Banquet—H. H. Champ, Vice-President, The Steel Company of Canada, Limited; James Turner, C.A., The T. Eaton Company, Ltd., Toronto, President, Canadian Society of Cost Accountants.
Oct. 31—"Standard Costs"—Speaker to be announced later.
Nov. 14—"Depreciation and Wasting Assets"—M. I. Long, C.A., Clarke, Houston & Company.
Nov. 28—"The Scope, Functions and Value of Time Studies"—H. F. Wilson, Wilson and Fessenden.
Dec. 12—"The Efficiency of Labour"—Professor H. Michell, McMaster University.

1929

- Jan. 23—"Standard Costs"—A general survey and discussion—The Research Committee, Hamilton Chapter.
Feb. 13—"Budgets in Preparation and Use"—A. J. Mouncey, The Norton Company of Canada, Ltd.
Feb. 27—Members' Problems.
Mar. 13—(a) "The Co-ordination of Statistical Record;" (b) "The Control of Waste Through Cost Records"—G. E. F. Smith, C.A., assisted by the Research Committee, Hamilton Chapter.
Mar. 27—"Operation of a Perpetual Inventory System"—A. Schaefer, Assistant Chief Cost Clerk, The Steel Company of Canada, Ltd.
Apr. 10—Closing Banquet—Speakers to be announced later.

